



AMENDMENT

Amendments to the Claims

(currently amended) A surgical instrument, comprising:
a handle portion operably configured to produce an articulation motion and a firing motion;
a shaft having a longitudinal axis attached to the handle portion for transferring the articulation motion and the firing motion;
an end effector;
an articulation mechanism coupling the shaft to the end effector and responsive to the articulation motion to rotate the end effector from the longitudinal axis of the shaft about an axis of articulation;
and
a firing mechanism responsive to the firing motion and coupled for movement through the articulation mechanism and having an actuating portion with a second thickness end effector, the firing mechanism comprising:
an actuating portion having a first thickness and coupled for movement and positioned in the end effector, and
an articulation portion proximally attached to the actuating portion and having a second thickness less than the first thickness aligned with the axis of articulation for resilient articulating movement through the articulation mechanism.

2. (original) The surgical instrument of claim 1, wherein the end effector comprises a pair of pivotally opposing jaws for clamping tissue, the actuating portion of the firing mechanism includes a distally presented cutting edge for severing the clamped tissue.

3. (original) The surgical instrument of claim 2, the end effector further comprising:
an elongate channel coupled to the handle portion and including a channel slot;
a staple cartridge received by the elongate channel and incorporating a proximally positioned wedge member aligned to cam upward a driver supporting a staple;
an anvil pivotally coupled to the elongate channel and including an anvil channel; and

the articulation portion of the firing mechanism including the distally presented cutting edge longitudinally received between the elongate channel and the anvil, an upper member engageable to the anvil channel, a lower member engaging the channel slot, and a middle member operable to actuate the staple cartridge by distally translating the wedge member of the staple cartridge.

4. (original) The surgical instrument of claim 3, wherein the shaft further comprises an articulation drive tube responsive to the rotational motion from the handle portion and distally terminating in a gear section, the articulation mechanism comprising a spur gear proximally attached to the end effector and engaged by the gear section.

5. (original) The surgical instrument of claim 1, wherein the shaft further comprises an articulation drive tube responsive to the rotational motion from the handle portion and distally terminating in a gear section, the articulation mechanism comprising a spur gear proximally attached to the end effector and engaged by the gear section.

6. (currently amended) A surgical instrument comprising:
a handle portion operable to produce a firing motion, a closing motion, and an articulation motion;
a shaft coupled to the handle portion operable to separately transfer the firing motion, the closing motion, and the articulation motion;
an elongate channel coupled to the shaft and including a channel slot,
an anvil pivotally coupled to the elongate channel, responsive to the closing motion from the shaft, and including an anvil channel; [and]
a firing device including a distally presented cutting edge longitudinally received between the elongate channel and the anvil; and
an articulation mechanism pivoting the elongate channel from the shaft in response to the articulation motion;
wherein firing device includes a thinned strip portion transitioning through the articulation mechanism.

7. (currently amended) The surgical instrument of claim 6, wherein the firing device is operatively configured to affirmatively space the anvil from the elongate channel during longitudinal travel between the anvil and elongate channel.

8. (original) The surgical instrument of claim 6, further comprising a staple cartridge engaged by the elongate channel and including a proximally opened slot for receiving the cutting edge of the firing device, the staple cartridge including a plurality of staples cammed upwardly by the distal longitudinal movement of the firing device.

9. (original) The surgical instrument of claim 8, wherein the staple cartridge further includes a plurality of drivers supporting the plurality of staples and a wedge sled responsive to the distal longitudinal movement of the firing mechanism to cam upwardly the drivers and thus form the plurality of staples against the anvil.

10. (currently amended) The surgical instrument of claim 6 [8], further comprising a closure member operatively configured to longitudinally transfer the closure motion to the end effector to [wherein the anvil forms an] inwardly bias distal ends of the anvil and [biased relation to] the elongate channel [configured] to assist the firing device in affirmatively spacing [between] the anvil and elongate channel during actuation of the staple cartridge.

11. (currently amended) A surgical instrument, comprising:
a handle portion operably configured to produce a rotational articulation motion and a longitudinal firing motion;
a shaft operably configured to separately transfer the rotational articulation motion and the longitudinal firing motion;
an end effector distally coupled to the shaft [means];
an articulation mechanism responsive to the rotational articulation motion to articulate the end effector; and

a firing bar responsive to the longitudinal firing motion of the handle portion, the firing bar comprising:

an elongate strip longitudinally positioned for movement through the articulation mechanism and laterally aligned with an axis of articulation, and

a firing bar head distally aligned with, thicker than, and connected to the elongate strip and positioned for longitudinal movement in the end effector.

12. (currently amended) The surgical instrument of claim 11, wherein the handle portion comprises a handle means for producing a rotational articulation motion and a longitudinal firing motion, and the shaft comprises a shaft means for separately transferring the rotational articulation motion and the longitudinal firing motion, and wherein the articulation mechanism responds to the rotational articulation motion by articulating the end effector in an articulation plane bisected by a longitudinal axis of the shaft.

13. (original) The surgical instrument of claim 12, wherein the handle means further comprises a means for producing a longitudinal closing motion, and the shaft means further comprises a means for separately transferring the longitudinal closing motion.

14. (new) The surgical instrument of claim 6, wherein the firing motion is distally directed by the thinned strip portion to the cutting edge.

15. (new) The surgical instrument of claim 14, wherein the thinned strip portion has a width aligned with an axis of articulation substantially larger than a thickness of the thinned strip portion transverse to the axis of articulation, thereby operably configured to resiliently bend about the axis of articulation while resisting pivoting orthogonally to the longitudinal axis and articulation axis, the firing device having an increased thickness.

16. (new) The surgical instrument of claim 7, wherein the firing device includes an upper feature slidably engaged to the anvil and a lower feature slidably engaged to the elongate channel to cause spacing therebetween during longitudinal travel.

17. (new) The surgical instrument of claim 11, wherein the elongate strip has a width aligned with an axis of articulation substantially larger than a thickness of the elongate strip transverse to the axis of articulation, thereby operably configured to resiliently bend about the axis of articulation while resisting pivoting in a lateral axis orthogonal to both the longitudinal and articulation axes.

18. (new) The surgical instrument of claim 1, wherein the firing mechanism comprises an elongate longitudinal strip.